

1/2 040 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--COPOLYMERIZATION OF BUTYL METHACRYLATE WITH 5-ALKYL, 1,3-DIALLYL
ISOCYANURATES -U-
AUTHOR--(04)-CHOVNIK, L.I., KHOMENKOVA, K.K., PAZENKO, Z.N., KORNEV, K.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1) 9-10

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMERIZATION, ACRYLATE, HEAT RESISTANCE, TENSILE STRENGTH,
ELONGATION, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1509

STEP NO--UR/0436/70/000/001/0009/0010

CIRC ACCESSION NO--A90112503

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION N1--AP0112503

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYM. OF H SUB2 C:OMECO
SUB2 BU (I) WITH 5,ALKYL,1,3,DIALLYL ISOCYANURATES (II) (U.S.S.R.
165,460) GAVE HEAT RESISTANT COPOLYMERS. THE BEST I-II RATIO WAS 95:5.
THE BULK COPOLYM. WITH 0.3PERCENT BZ SUB2 O SUB2 AT 60-80DEGREES GAVE
COPOLYMERS WITH THE FOLLOWING PROPERTIES (ALKYL, PERCENT WT. LOSS AT
210DEGREES IN 150 MIN, TENSILE STRENGTH AT BREAK IN KG-MM PRIME2,
PERCENT ELONGATION AT BREAK GIVEN): ME, 2.11, 0.300, 455; ET, 3.29,
0.658, 362.5; BU, 3.35, -: -: AMYL, 3.41, 0.4005, 4416.5; OCTYL, 5.73,
0.5280, 448; BROMOETHYL, 2.73, 0.6501, 198. THE EXPTL. VALUES FOR
POLY(BU METHCRYLATE) WERE 55.97, 0.4897, AND 510 (IN THE ABOVE ORDER).

UNCLASSIFIED

60219

KORNEV, N. M.

TECHNICAL TRANSLATION

FTIC-M-25-1065-71

ENGLISH TITLE: Production Quality Stability and Engine
Operating Time Before Major Overhaul

FOREIGN TITLE: Stabil'nost' Kachestva Produktov i Motorev

AUTHOR: N. P. Kornov, Chief Inspector

MECHANICAL ENGINEERING

SOURCE: Standart: Kachestvo, No. 10, 1970, pp. 56-60

Translated for FTIC by Leo Yanner Associates

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mechanical
Engg.

USSR

UDC 621.373.52-181.48

ZHITNIKOV, YE. I., VISHIN, M. G., and KORNEV, V. A.

"Generator of High-Stability Oscillations Based on Integrated Hybrid Microcircuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron tekhn. (Collected Scientific Works on Problems in Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp.10, pp 188-193 (from RZh-Radiotekhnika. No 11, Nov 72, Abstract No 11 D267)

Translation: The authors present the results from the development of a reference generator of high stability oscillations based on integrated hybrid microcircuits and designed for the production of stable time traces. The generator has two independent quartz thermostatically controlled exciters operating on one of the frequencies of the 150-200 kc range. Daily frequency instability and hourly frequency instability are ensured at not less than $\pm 5 \cdot 10^{-7}$ and $\pm 1 \cdot 10^{-7}$ respectively. The design of the generator makes it possible to operate under conditions of the effect of vibrations, impacts, linear acceleration, changes in external temperature, humidity, and pressure. Resume.

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1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF THE CONFIGURATION OF THE CONTACT SURFACE OF THE LARGE
BELL ON THE OPERATION OF A BLAST FURNACE -U-
AUTHOR--KUDDOYAROV, M.S., ZHIGULEV, P.G., POLYANSKIY, D.S., KORNEV, V.B.,
GORBACHEV, V.P.
COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 12-15

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, METALLURGIC FURNACE, COMPONENT LIFE EXPECTANCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0142

STEP NO--UR/0133/70/030/001/0012/0015

CIRC ACCESSION NO--AP0103871

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103821

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHORTENED LIFE OF LARGE BELLS CAUSED BY EXCESSIVE LEAKAGE WHEN THE TOP PRESSURE IS SIMILAR TO 1 ATM SUGGESTED REPLACING THE CONICAL CONTACT SURFACE OF A 55DEGREES LARGE BELL WITH A SPHERICAL ONE. THE POSSIBILITY WAS INVESTIGATED ON A 1:25 SCALE TRANSPARENT FURNACE TOP MODEL, AND NEW BELLS WERE INSTALLED ON 2 FURNACES. THEIR PERFORMANCE IS DESCRIBED. A SPHERICAL CONTACT SURFACE LEADS TO A TIGHTER JOINT AND THEREFORE TO A LONGER LIFE, RENDERS THE CHARGE TRAJECTORY STEEPER, LOWERING ITS IMPACT POINT ON THE THROAT ARMOR BY 300-320 MM, AND TENDS TO INCREASE THE PERIPHERAL GAS STREAM.

UNCLASSIFIED

1 1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPLEXING OF COPPER, II WITH 2, HYDROXYETHYL, IMINO, DIACETIC ACID -U-

AUTHOR--(02)--KORNEV, V.I., MUKANDV, I.P.

COUNTRY OF INFO--USSR

SOURCE--Zh. NEORG. KHIM. 1970, 15(4), 1000-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER COMPLEX, ORGANOCOPPER COMPOUND, ACETIC ACID, HYDROXYL
RADICAL, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--J00472029

STEP NO--UR/0078/70/011/004/1000/1002

CIRC ACCESSION NO--AP0112286

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT PH 2.5-3.0, CU(II) FORMS A 1:1 COMPLEX WITH (2, HYDROXYETHYL)IMINO)DIACETIC ACID IN SUB2 L1. THE COMPLEX HAS AN INSTABILITY CONST. OF 1.0×10^7 PRIME NEGATIVE1 AND ACIDOLYSIS (CU PRIME2 POSITIVE PLUS H SUB2 L EQUALS CUL PLUS 2H PRIME POSITIVE) CONST. OF 1.782 AND 1.662 AT 1×10^7 PRIME NEGATIVE3 AND 7.5×10^7 PRIME NEGATIVE4 M CU PRIME2 POSITIVE, RESP.
FACILITY: UDMURT. GOC. PEDAGOG. INST., IZHEVSK, USSR.

UNCLASSIFIED

172 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMPLEXING OF COPPER, II, WITH EDTA -U-
AUTHOR--(03)-KORNEV, V.I., ASTAKHOV, K.V., RYBINA, V.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1311-13
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPPER COMPLEX, ETHYLENEDIAMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0885 STEP NO--UR/0070/70/044/005/1311/1313
CIRC ACCESSION NO--AP0137913

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 1:1 COMPLEX OF CU PRIME2
POSITIVE WITH EDTA (H SUB4 A) IS FORMED. DEPENDING UPON THE PH, THIS
COMPLEX EXISTS IN THE FORMS: CUH SUB3 A PRIME POSITIVE, CUH SUB2 A,
CUHA PRIME NEGATIVE, OR CUA PRIME2 NEGATIVE. THE PH INTERVAL OF EACH
FORM OF THE COMPLEX IS ESTABLISHED AND ITS INSTABILITY CONST. IS DETO.
FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 539.38

KORNEV, V. M.

"Simplified Theories of Multilayer Plates"

Kiev, Prikladnaya Mekhanika, Vol 8, No 11, Nov 72, pp 66-71.

Abstract: The full system of equations is studied for calculation of multilayer plates. The stress-strain state of a plate is composed of the main portion and the edge effect, which is generated by secondary terms with small parameters with higher-order derivatives. A formulation is developed for the problem of the simplified theory of multilayer plates, when the small parameters with the higher-order derivatives approach zero. These parameters may be included in the boundary conditions. The essential dependence of the formulation of the boundary conditions of simplified problems on oscillation of the stress-strain state along the contour of the plate is noted. Edge conditions are formulated for a plate with a free edge in the general case.

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USSR

GRIGOLYUK, E. I., KORNEV, V. M.

"Asymptotic Study of Equations for Asymmetrical Bending of a Multilayer Cylindrical Envelope"

Teoriya Platin i Obolochek [Theory of Plates and Envelopes -- Collection of Works], Moscow, Nauka Press, 1971, pp 74-82, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V147 by the author's).

Translation: A study is made of strength calculation of a circular cylindrical multilayer envelope, semi-infinite with arbitrary oscillation of the stress-strain state. It is considered that the envelope is loaded at the end by a self-balanced system of forces. Following separation of variables, depending on the number of waves, asymptotic analysis of the resolving equation is performed around the circular coordinate. It is found that the solution consists of a main portion and a supplementary portion (edge effect). The edge effect in a multilayer cylindrical envelope differs from the edge effect in a homogeneous structure both as to rate of attenuation and as to form (with certain values of parameters, it stops oscillating).

Boundary conditions are formulated for the main portion of the solution as functions of the oscillation of the stress-strain state. The main portion of the solution is adjusted by the edge effect. Specific examples are given

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USSR

GRIGOLYUK, E. I., KORNEV, V. M., Teoriya Plastin i Obolochek, Moscow, Nauka Press, 1971, pp 74-82.

of the formulation of the boundary conditions for the main and supplementary portions of the solution with a fixed oscillation of the solution around the circular coordinate. The asymptotic method of construction of the solutions of the equations of homogeneous and layered envelopes used is quite effective. 9 Biblio. Refs.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FORMULATION OF BOUNDARY CONDITIONS FOR SIMPLIFIED EQUATIONS OF
SHELLS OF REVOLUTION -U-
AUTHOR--KORNEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MATEMATIKA I MEKhanika, VOL. 34, JAN.-FEB. 1970, P.
84-94
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SHELL OF REVOLUTION, STRESS ANALYSIS, BOUNDARY VALUE PROBLEM,
PERTURBATION METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--1988/1453

STEP NO--UR/0040/70/034/000/0084/0094

CIRC ACCESSION NO--AP0106209

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSTRUCTION OF BOUNDARY CONDITIONS FOR SHELLS OF REVOLUTION BY SEPARATING THE STRESS STATE INTO TWO SECTIONS CONSISTING OF A SMOOTHLY CHANGING PORTION (MAIN PART OF THE SOLUTION) AND A SECOND SECTION WHICH VARIES SHARPLY AWAY FROM THE EDGE TOWARD THE INTERIOR. NONCONTRADICTIONARY BOUNDARY CONDITIONS ARE FORMULATED FOR THE DEGENERATE PROBLEM (MAIN PART OF THE SOLUTION). A THEOREM IS GIVEN FOR THE PERTURBATION OF A LINEAR BOUNDARY VALUE PROBLEM OF AN ORDINARY DIFFERENTIAL EQUATION BY A HIGHER ORDER OPERATOR, WITH THE SMALL PARAMETER CONTAINED NOT ONLY IN THE DISTURBING OPERATOR BUT ALSO IN THE BOUNDARY CONDITIONS (THE SMALL PARAMETER CHARACTERIZES THE THIN WALL NATURE OF THE SHELL). EXAMPLES OF SIMPLIFIED THEORIES AND THEIR BOUNDARY CONDITIONS ARE GIVEN FOR SPECIFIC TYPES OF SHELL EDGE RESTRAINT.

UNCLASSIFIED

USSR

UDC: 621.396.679.4(088.8)

KOROTKOV, V. P., KAS'YANOV, D. K., SMIRNOVA, Ye. N., KORNEV, V. N.

621.396.679.4(088.8)

"An Automatic Antenna Matching Device"

USSR Author's Certificate No 263009, filed 9 Aug 68, published 8 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B407 P)

Translation: This Author's Certificate introduces an automatic antenna matching device. As a distinguishing feature of the patent, the device is designed for complete antenna matching on several working frequencies. An auxiliary long line is connected in front of the matching cell, which consists of series and parallel connected variable capacitors. Variable capacitors are also connected in this long line. Mounted between the plates of all variable capacitors are disks, each of them being broken up into several identical sectors having different dielectric constants, all the dielectric disks being made to rotate from a single step-by-step motor. Two illustrations. Resumé.

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1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--AN AUTOMATIC ANTENNA MATCHER -U-
AUTHOR--KOROTKOV, V.P., KASYANOV, D.K., SMIRNOVA, YE.N., KORNEV, V.Y.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263009
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRATSY, TOVARNYE ZNAKI NO 7, 4 FEB
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ANTENNA COMPONENT, PATENT, ANTENNA TUNING, VARIABLE CAPACITOR,
DIELECTRIC CONSTANT, SERVOMOTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1036

STEP NO--UR/0632/70/000/000/0000/0000

CIRC ACCESSION NO--AA0112211

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UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AA0112211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES AN AUTOMATIC ANTENNA MATCHER BASED ON AUTHOR'S CERTIFICATE NO 187845. THE MATCHER DIFFERS BECAUSE THE UNIT IS DESIGNED TO PROVIDE COMPLETE MATCHING OF THE ANTENNA ON SEVERAL WORKING FREQUENCIES. AN AUXILIARY LONG LINE IS CONNECTED IN FRONT OF THE MATCHING CELL, WHICH CONSISTS OF VARIABLE CAPACITORS CONNECTED IN SERIES AND PARALLEL. ALSO CONNECTED TO THE LONG LINE ARE VARIABLE CAPACITORS, AND BETWEEN THE PLATES OF ALL VARIABLE CAPACITORS ARE DISCS, EACH BROKEN UP INTO SEVERAL IDENTICAL SECTORS HAVING VARIOUS DIELECTRIC CONSTANTS. ALL THE DIELECTRIC DISCS ARE ROTATED BY A SINGLE STEP SERVO MOTOR.

UNCLASSIFIED

USSR

UDC 621.396.679.4

KOROTKOV, V. P., KAS'YANOV, D. K., SMIRNOVA, Ye. N., KONNEV, V. N.

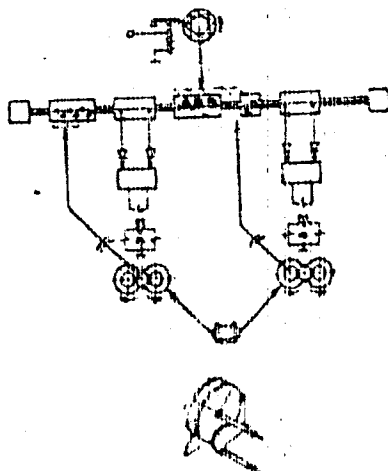
"An Automatic Antenna Matcher"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, 4 Feb 70, pp 53-54, patent No 263009, filed 9 Aug 68

Translation: This Author's Certificate introduces an automatic antenna matcher based on Author's Certificate No 187845. The matcher differs because the unit is designed to provide complete matching of the antenna on several working frequencies. An auxiliary long line is connected in front of the matching cell, which consists of variable capacitors connected in series and parallel. Also connected to the long line are variable capacitors, and between the plates of all variable capacitors are discs, each broken up into several identical sectors having various dielectric constants. All the dielectric discs are rotated by a single step-servo motor.

USSR

KOROTKOV, V. P., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy,
Tovarnyye Znaki, No 7, 4 Feb 70, pp 53-54, patent No 263009, filed 9 Aug 69



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USSR

UDC: 577.4

~~KORNEV, Yu. N.~~, PISKUNOV, S. V., and SERGEYEV, S. N.

"Problems of Constructing Algorithms for Generalized Substitutions With Context Separation"

Novosibirsk, V sb. Vychisl. sistemy (Computer Systems--collection of works) No 47, 1971, pp 117-130 (from RZh--Matematika, No 8, 1972, Abstract No 8V431)

Translation: The investigation of algorithms of generalized substitution is continued (see RZhMat, 1972, 5V318). Generalized substitutions are considered as representations defined in a set of cellular sets. An investigation is made of the problems of constructing more complex algorithms from simple data: the composition and conditional branching of algorithms of generalized substitutions.

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USSR

UDC: 577.4

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"Problems of Constructing Algorithms of Generalized Substitutions With an Isolated Context"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 47, Novosibirsk, 1971, pp 117-130 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V431)

Translation: The paper continues further investigation of algorithms of generalized substitutions (see RZhMat 1972, 5V318). Generalized substitutions are treated as mappings defined on a set of cellular sets. An investigation is made into questions of constructing more complex algorithms from given simple ones: compositions and conditional branchings of algorithms of generalized substitutions.

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USSR

UDC 8.74

KORNEY, YU. N., PISKUNOV, S. V., SERGEYEV, S. N.

"IP-I Language (Complete Description)"

V sb. Vychisl. sistemy (Computation Systems -- collection of works), vyp. 47, Novosibirsk, 1971, pp 131-159 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V593)

Translation: The IP-I language is a programming language designed for word conversion in an arbitrary alphabet.

With respect to the carrier, the language is oriented toward computers with homogeneous structure and homogeneous networks of finite automata: iterative circuits, computation media, and so on.

The dynamic structure of the program is characteristic of the language. The belonging of a word in the program to one syntactic formation or another (and, consequently, its interpretation) is determined by what subword of the program is being examined by the executive program at the given point in time, and it depends on the states of the program at the preceding points in time.

Just as in COMMIT, SNOBOL, (SNOBOL-3), in IP-I the basic means of word transformation is the substitution operation.

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D. Programming and Mathematical Machine Theory

USSR

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"Microprogrammed Homogeneous Processor Oriented to Linear Algebra Problems"

Sb. Tr. In-t Mat. Sib. Otd. AN SSSR [Collected Works of Institute of Mathematics, Siberian Division, Academy of Sciences, USSR], 1972, No 6(23), pp 34-64 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V612, by the authors).

Translation: The logical plan of a processor for solution of linear algebra problems is described. The plan of the processor is a practical example of construction of a homogeneous computer device which operates algorithms of generalized permutation. The operation of the processor is illustrated on the example of an algorithm for solution of a problem of linear programming. Analysis of the example showed the effectiveness of generalized permutation algorithms as an algorithmic language: the programs produced are short and rather effective (as to number of cycles), requiring almost no restructuring of files.

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Computers: Applications & Programming

USSR

UDC 8.74

KORNEV, YU. N., PISKUNOV, S. V., and SERGEYEV, S. N.

"JP-1 Programming Language for Problems of Processing Arbitrary-Alphabet Words"
V sb. Vychisl. sistemy (Computational Systems -- Collection of Works), vyp. 41,
Novosibirsk, 1971, pp 98-112 (from RZh-Matematika, No 5, May 72, Abstract No
5V506 by V. MIKHEYEV)

Translation: The article describes the basic features of the JP-1 algorithmic programming language, intended for converting arbitrary-alphabet words. As far as the carrier is concerned, the language is oriented towards machines with homogeneous structure and towards homogeneous networks of finite automata; iterative networks, computer media, etc. Single-symbol names have been adopted in the language in order to make interpretation and syntax-checking simple and fast. Language operators are the following: reset statement, conditional statement, read statement, transcribe statement, clear statement, end statement. Numerous examples are given of the working of these operators. It is noted that in order to check the basic properties and performance of the principal aids of the language, a mathematical model was constructed for realization of the language by a homogeneous chain of automata. This model takes the form of a program in BESM-6 codes and is the interpreter of the JP-1 language.

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USSR

UDC: 8.74

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"The JP-I Language for Programming Problems of Word Processing in an Arbitrary Alphabet"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 41, Novosibirsk, 1971, pp 98-112 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V506)

Translation: The paper describes the principal features of the JP-1 algorithmic programming language for word transformation in an arbitrary alphabet. With respect to the medium, the language is oriented for computers with homogeneous structure and for homogeneous networks of finite automata: iteration networks, computer media, etc. Single-symbol nouns are used in the language to make interpretation and syntactic check quick and simple. The operators of the language are: substitution operator, condition operator, read operator, rewrite operator, clear operator and end operator. Numerous examples are given of the operation of these operators. It is noted that a mathematical model of realization of the language by a homogeneous chain of automata has been constructed for checking the principal properties and working out the basic media of the language. This model takes the form of a program in BESM-6 codes and is an interpreter of the JP-1 language. V. Mikheyev.

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USSR

UDC: 681.3.06:51

KORNEV, Yu. N., PISHKUNOV, S. V., SERGEYEV, S. N.

"Algorithms of Generalized Substitutions and Problems of Their Interpretation"

V sb. Teor. kibernetika. Vyp. 4 (Theoretical Cybernetics--collection of works, No 4), Kiev, 1970, pp 3-20 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V702)

Translation: Formal rules are given for recording algorithms in the form of substitutions defined on a set of generalized words. A generalized word is taken to mean a finite set of named cells in each of which is recorded a symbol from some alphabet called the alphabet of states of the cell. The rules for carrying out the algorithms allow simultaneous application of the substitutions of the algorithm to the word to be processed. Consideration is given to problems involving recognition of the noncontradiction of systems of generalized substitutions, and to problems of interpretation of one class of algorithms with the aid of networks of automata.

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USSR

UDC 538.27

KORNEV, Yu. V. and SEMENTSOV, D., Moscow Higher Technical School imeni N. E. Bauman

"FMR in Two-Layer Films With Perpendicular Magnetization"

Tomsk, Izvestiya VUZ, Fizika, No 5, 71, pp 130-132

Abstract: The high-frequency properties of multi-layer and single-layer magnetic films differ considerably, the main reason being the interaction between magnetic films. This article examines the problem of the resonance behavior of two-layer films magnetized perpendicular to their own surface. Since the magnetic films are assumed to be conducting, this results in a damping of the UHF field at the depth of the skin layer and thus to a heterogeneous distribution of the magnetization throughout the films. This fact, coupled with the interaction between the magnetic films, results in a shift of the resonance frequencies of each film when they are combined into a two-layer system. Taking these facts into consideration, the authors give a brief discussion of this problem using a number of detailed equations and arrive at a satisfactory numerical solution. The article contains a bibliography of five titles.

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USSR

UDC 538.245

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KORNEV, Yu. V., YURASOV, N. I., and BYKOV, G. P., Moscow, Higher Technical School
Imeni N. E. Bauman

"On the Role of Magnetic Microstructure for Ferromagnetic Resonance in a Conducting Ferromagnetic Layer. I. Character of the Skin Effect in Ferromagnetic Resonance Without Allowance for Magnetic Structure"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 9, 1970, pp 7-12

Abstract: A study of the properties of a ferromagnetic metal layer in an electromagnetic field yielded the simultaneous solution of Maxwell's equations and the equation of magnetic moment density variation. The latter was chosen in the Landau-Lifshits form with the relaxation term suggested by Hilbert. The usual local relation with homogeneous and isotropic static conduction was used for the conduction current density. The results indicate the anomalous character of the skin effect for the first mode and the presence of anomalous skin-effect features for the second and third modes in the range of fields used in practice. No allowance was made for the influence of the microstructure on the character of the skin effect. An evaluation of the influence of this factor will be given in the second part of the article. A "Minsk-22" digital computer was used for some of the calculations. S. A. Temirbulatov took part in the work.

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USSR

UDC 595.126.3: 591.16

KORNEVA, L. G., Institute of Zoology and Parasitology, Academy of Sciences
Uzbek SSR (Tashkent)

"The Reproduction of *Vipera lebetina*"

Moscow, Zoologicheskii Zhurnal, Vol 51, No 3, 1972, pp 462-464

Abstract: Lengthy captivity leads to a decline in the reproductive capacity of snakes. In order to study the reproduction of *Vipera lebetina*, 40 females were captured in Azerbaydzhan from April to June 1968. Their lengths ranged from 770 to 1110 mm. They were divided into three groups: 25 females which subsequently laid normal eggs formed group I; seven females who destroyed fertile or partially laid eggs formed group II; and eight barren females formed group III. Eggs were laid from 15 July to 22 August. A total of 398 eggs was obtained. The average length was 43 mm (ranging from 32 to 53) and the average weight was 17.4 g (ranging from 13.5 to 20.6). The weight and size were not related to the number of eggs in the clutch. A total of 90 eggs was obtained from group II. Only 85% of the eggs in both groups contained embryos. The weight lost by the females after the eggs were laid can be computed from the equation

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USSR

UDC 615.919:591.145.2.615.918:58.615.9:576.8.097.29

KORNEVA, N. V.

"Mechanism for the Change in Blood Pressure and Frequency of Heart Contractions Under the Influence of Bee Venom"

Uch. zap. Gor'kov. un-t. Ser. biol. (Educational Proceedings of the Gor'kov University, Biological Series), Vyp 40, 1972, pp 56-60 (from Referativnyy Zhurnal -- Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 1, 1973, Abstract No 1.54.786 by V. K.)

Translation: Bee venom (BV; 1 mg/kg) administered intravenously to drugged cats reduced the AD arterial pressure and heart beat (HB) and changed the respiration rate. Injection of BV (0.7 mg/kg) directly into the heart gave an analogous but stronger reaction. For the vagotomized cats, the BV reduced the AD to a much smaller degree and the HB frequency was not affected.

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Acc. Nr: **037003**

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 159-164

EFFECT OF LESIONS IN THE HYPOTHALAMIC POSTERIOR NUCLEI ON
THE THYROTROPIC AND EXOPHTHALMIC HYPOPHYSEAL ACTIVITY
IN RABBITS

Korneva, Ye. A.; Potin, V. V.

Lab. of Comp. Physiology, Institute for Experimental Medicine, Acad. Med. Sci. USSR,
and Dept. of Endocrinology, Institut of Obstetrics and Gynecology, Acad. Med. Sci. USSR,
Leningrad

Lesions in the hypothalamic posterior nucleus were shown to significantly diminish
the exophthalmic activity and not to affect the thyrotropic that.

Local lesions in other hypothalamic posterior structures did not affect either exophthalmic or thyrotropic hypophyseal activity.

The hypothalamic posterior nucleus is known to influence the antibody formation.
Apparently, changes of the exophthalmic factor secretory level is one of the ways of that influence.

REEL/FRA
19721935

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SPIRITUOUS METHOD OF SERUMAL POLYGLOBULIN OBTENTION -U-
AUTHOR-(04)-DOVGALYEV, S.I., DANILOV, I.P., DREKOV, G.A., KORNEYCHIK, V.S.
COUNTRY OF INFO--USSR
SOURCE--ZDRAVOOKHRANENIYE BELORUSSII, 1970, NR 2, PP 26-28
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GAMMA GLOBULIN, DRUG PRODUCTION, HEMATOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1655 STEP NO--UR/0477/70/000/002/0026/0028
CIRC ACCESSION NO--AP0106401
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0106401
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW SPIRITUOUS METHOD WAS
OFFERED OF OBTAINING SERUMAL POLYGLOBULIN, DIFFERING FROM THE
RIVANOLUOUS METHOD OF OBTAINING GAMMA GLOBULIN IN EXCLUDING THE
BULKINESS OF MULTITUDE OF OPERATIONS; IT INCREASED THE APPARATUS OUTPUT.
ITS PRODUCTION IS AVAILABLE TO ANY INSTITUTION OF BLOOD SERVICE.

UNCLASSIFIED

USSR

UDC 669.189

SHUL'TE, Yu. A., KORNEYCHUK, A. I., SEBESTYUK, A. A., and SPERANSKIY, B. S.

"Effect of Casting Temperatures on the Mechanical Properties and Cold Brittleness of G13L High-Manganese Steel"

Metallurgicheskaya i Gornorudnaya Promyshlennost', No 2, 1971, pp 48-50

Abstract: High-manganese steel with fine-grained structure has good mechanical properties and durability. The relation between the casting temperature and the mechanical properties of the steel were studied. The temperature of the metal was measured in the ladle directly in front of the casting form by a thermocouple and potentiometer setup. At lower casting temperatures, the mechanical properties were improved. The relation between impact strength σ_K and casting temperature t is $\sigma_K = 123 - 0.071 t$. The strength σ_B is related to the casting temperature t by $\sigma_B = 220 - 0.097 t$ and the specific elongation δ to casting temperature by $\delta = 123 - 0.062 t$. Chemical composition also affects the mechanical properties. Samples for mechanical testing were cast from metals of the same composition at temperatures of 1440 and 1385°C. They were cooled in alcohol-liquid N_2 mixtures and tested for impact strength from +100 to -100°C. Samples cast at the lower temperature had greater strength.

1/1

AA0040539

Korneychuk, G.P.

UN 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

237110 TEST REACTOR FOR CATALYSIS AND KINETICS
of high-boiling processes, has a cock 6
at the end of its inner tube 5 to form the glass
joint member, tubes coaxial to this cock 4,3, used
to connect to the inside of the cylindrical body 1
containing the catalyst chamber 2. The bottom end
of the chamber forms a coil 14 with a layer of
glass filament 15 on it so as to pack it into the
cylinder 16. Cylinders 17,18 contain asbestos
graphite packings 19,20 to seal off the inner
cavity. Two independent and insulated flows are
maintained during the period required for estab-
lishing test conditions; a flow of reaction mix-
ture entering through the connection 21 to the
body 1 and on through the orifice 7 in tube 4
to leave through 22; and a flow of inert gas

19750054

AA0040539

entering via the cock 6 into the catalyst chamber 2 and so along channel 12 in the wall of the cone 11, the inner tube 23 and out through 24. Once conditions are right, the gas is stopped off. The catalyst chamber is coupled to the reagent flow by turning the cock plug. The catalysis schedule is now started up. By alternating reagent flow and inert gas supply a pulsating system can be provided. 15.9.67. no 1185674/23-26. SHAPRINSKAYA, T.M. et al. L.V. Pisarzhevskii Physical Chemistry Inst. Acad. Sciences. Ukrainian SSR. (8.7.69.) Bul.8/12.2.69. Class 12g. Int.Cl. B01j.

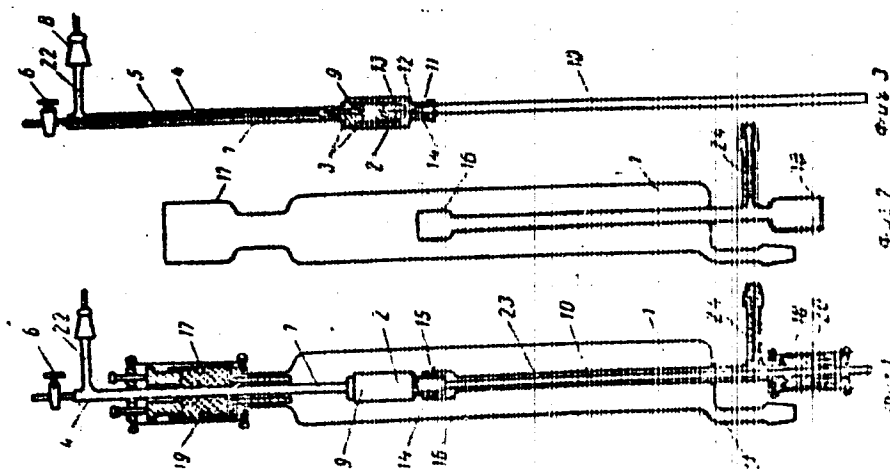
AUTHORS:

Shaprinskaya, T. M.; Korneychuk, G. P.; Stasevich, V. P.
and Semenvuk, Yu. V.

Institut Fizicheskoy Khimii imeni L. V. Pisarzhevskogo
AN Ukrainskoy SSR

19750055

AA0040539



19750056

USSR

UDC 517.5

KORNEYCHUK, N. P., Dnepropetrovsk State University

"Inequalities for Differentiable Periodic Functions and Best Approximation of One Class of Functions by Another"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Matematicheskaya, Vol 36, No 2, Mar-Apr 72, pp 423-434

Abstract: The author continues his study of extremal properties of differentiable periodic functions connected with permutations and proves a number of new assertions of the comparison theorem type. The results are used to obtain an exact estimate of the best uniform approximation of functions of the class $W_{2l}^r H_\omega$ by functions of the class $W_{2l}^{r+1} K$.

1/1

USSR

KORNEYCHUK, N. P.; POLOVINA, A. I. (Dnepropetrovsk State University, Komsomolsk Mining and Metallurgical Institute)

"Approximation of Continuous Functions by Algebraic Polynomials"

Kiev, Ukrainskiy Matematicheskiy Zhurnal; May-June, 1972; pp 328-40

ABSTRACT: Let H_ω be a class of functions $f(x)$ continuous in the interval $[-1, 1]$ the modulus of continuity of which — i.e., the quantity

$$\omega(t; x) = \sup_{|x'| - |x''| = t} |f(x') - f(x'')| \quad (x, x' \in [-1, 1])$$

does not exceed a given modulus of continuity $\omega = \omega(t)$,

For any $f(x) \in H_\omega$ there exists a sequence of algebraic polynomials $\{P_n(f; x)\}$ of degree $n = 1, 2, 3, \dots$ such that

$$|f(x) - P_{n-1}(f; x)| \leq \theta \left(\frac{n}{n-1} \right)^{1/2} \omega \left(\frac{1}{n} \right) + o \left(\omega \left(\frac{1}{n} \right) \right),$$

where $1/2 \leq \theta \leq 1$, uniformly with respect to $x \in [-1, 1]$ for $n \rightarrow \infty$. For a convex continuity $\theta = 1/2$.

1/1. There are four bibliographic references.

USSR

UDC: 681.327

KORNEYCHUK, V. I., Kiev Polytechnical Institute

"A Memory Device"

USSR Author's Certificate No 332498, filed 9 Mar 70, published 13 Apr 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan
73, abstract No 1B376 P)

Translation: A memory unit is known which contains an address accumulator connected through a decoder to an address register, an associative accumulator connected to an encoder, and an input register connected to a control unit. This memory device permits normal operation of the associative accumulator even with failure of a certain number of its cells. This is achieved by using reserve associative accumulator cells which are not in use unless there are failures; this reduces the actual capacity of the memory.

The proposed memory device differs from the above-described unit in that it contains an adder whose first inputs are connected to the input register, the second inputs are connected to the encoder, and the outputs are connected to the address register. The proposed device also contains a code comparison unit whose first inputs are connected to the adder outputs, while the second inputs are connected to the outputs of the address register and the output is connected to the control unit. This increases memory capacity.

1/1

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USSR

TARASENKO, V. P., KORNEYCHUK, V. I.

"The Effectiveness of k-Valued Multiplier Circuits"

Mnogoustoych. Elementy i ikh Primeneniye [Multistable Elements and Their Applications -- Collection of Works], Moscow, Sov. Radio Press, 1971, pp 111-118, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V673).

NO ABSTRACT.

1/1

USSR

UDC 51.621.391

KORNEYCHUK, V. I.

"Minimization of Multivalued Functions in a System of Set Theory Operations"

Vestn. Kiev. Politekhn. In-ta Ser. Avtomatiki i Elektronpriborostr [Herald of Kiev Polytechnical Institute. Automation and Electrical Instrument Building Series], No 8, 1971, pp 46-50, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V672).

NO ABSTRACT.

1/1

USSR

KORNEYCHUK, V. I., TARACHENKO, V. P., TESLENKO, A. K.

"Synthesis of Combination Circuits in One Class of Multivalued Algebras"

Avtomatika i Vychisl. Tekhn. [Automation and Computer Technology], 1972, No 5, p 9-13 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V449, by G. Gavrilov).

Translation: A full system of functions in k-valued logic is studied, consisting of $\max(x, y)$, $\min(x, y)$ and m functions $\phi_j(k)$ ($1 \leq j \leq m$), among which there are k functions

$$I_s(x) = \begin{cases} k-1 & \text{where } x=s, \\ 0 & \text{where } x \neq s. \end{cases}$$

$s = 0, 1, \dots, k-1$. The authors have found that the set of functions $\{\phi_j(x)\}$ should include constants and identity functions (i.e., functions corresponding with the variables), since their realization does not require special logic elements, while their inclusion expands the capabilities for minimization of functions. Problems of synthesis and minimization of circuits in this system

1/3

- 52 -

USSR

Korneychuk, V. I., Tarachenko, V. P., Taslenko, A. K., *Avtomatika i Vychisl. Tekhn.*, 1972, No 5, pp 9-13.

of functions are studied. In the first stage of synthesis of a combination circuit, a representation of the function (which must be realized by the circuit) is selected in the form of a certain superposition of functions included in the initial system. It is stated that the most convenient and natural representation is the so-called canonical form

$$f(\tilde{x}) = \max_{\tilde{\sigma}} (\min (f(\tilde{\sigma}), f_{\sigma_1}(x_1), f_{\sigma_2}(x_2), \dots, f_{\sigma_n}(x_n))),$$

where $\tilde{x} = (x_1, x_2, \dots, x_n)$, $\tilde{\sigma} = (\sigma_1, \sigma_2, \dots, \sigma_n)$, $\sigma_i \in E_k = \{0, 1, \dots, k-1\}$ and the maximum is taken with respect to all sets $\tilde{\sigma}$ of values of variables x_1, x_2, \dots, x_n . The next stage in synthesis of a combination circuit consists of minimization of the canonical form of the function studied. Here, the operations of incomplete attachment and absorption are introduced, the application of which to canonical form of the function yields a certain analogue of the reduced dnf. The criterion of incomplete attachment is formulated and proven for this system without clarification of the form of functions $\phi_j(x)$.

2/3

USSR

Korneychuk, V. I., Tarachenko, V. P., Teslenko, A. K., *Avtomatika i Vychisl. Tekhn.*, 1972, No 5, pp 9-13.

At the same time, the authors note that the criterion of absorption should be established on the basis of the specific assignment of the set of functions $\{\phi_j(x)\}$. Further, synthesis of combination circuits is studied in the so-called expanded algebra of Post (terminology of the authors), including the constants $0, 1, \dots, k-1$, and the functions $\max(x, y)$, $\min(x, y)$, $I_s(x)$ ($0 \leq s \leq k-1$) and $\max(\alpha_1, x + \alpha_1, \dots, x + \alpha_q) + \beta$ (here the sum is taken with respect to mod k), $0 \leq \alpha_1 < \dots < \alpha_q \leq k-1$, $\beta \in \{0, 1\}$, $0 \leq q \leq k-1$.

3/3

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USSR

UDC: 681.142

~~KORNEYCHUK, V. I.~~, ROMANKEVICH, A. M., TARASENKO, V. P., Kiev Polytechnical
Institute imeni the Fiftieth Anniversary of the Great October Socialist
Revolution

"A Device for Shaping Carry Signals in Addition"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 5, Feb 71, Author's Certificate No 293240, Division G, filed 23 Jan 70,
published 15 Jan 71, pp 163-164

Translation: This Author's Certificate introduces a device for shaping carry
signals in addition. The device contains AND and OR circuits, a logic cir-
cuit based on a magnetic core, a flip-flop and a reference pulse oscillator.
As a distinguishing feature of the patent, the device is simplified and speed
is increased by connecting one of the inputs of the device to an input of
the OR circuit, and connecting the second input of the device to the other
input of the OR circuit and to the input of the first AND circuit. The out-
put of the OR circuit is connected to the readout winding of the core, the
record winding of the core being connected to the reset terminal of the
flip-flop and to the first output of the reference pulse oscillator. The
second and third outputs of the oscillator are connected to the inputs of
the second and third AND circuits respectively. The output winding of the
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USSR

KORNEYCHUK, V. I. et al., USSR Author's Certificate No 293240

core is connected to the set terminal of the flip-flop through the first AND circuit. The one-output and zero-output terminals of the flip-flop are connected through the second and third AND circuits to the inputs of another OR circuit, and the output of this OR circuit is connected to the output of the device.

2/2

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Acc. Nr.: A70046705

Ref. Code: 4R0146

USSR

UDC 681.14

KORNEYCHUK, V.I.

"Reliability of Position-Sensitive Multistable Elements"

Nadezhnost' pozitsionnykh mnogoustoychivyykh elementov
(of. English above), Leningrad, Izvestiya Vysshikh Ucheb-
nykh Zavedeniy, Priborostroyeniye, 1970. No 1. pp 127-130

Translation:

It is shown that the use of multistable elements
with highly stable and correctly selected parameters of the
electronic components makes it possible to improve con-
siderably the reliability of digital devices using these
elements.

Reel/Frame
19790008

1/2 013
UNCLASSIFIED
TITLE--1SYNTHESIS OF COMBINATIVE SCHEMES OF SUMMATION AND MULTIPLICATION
IN MULTICIPHERED STRUCTURAL ALPHABET -U-
AUTHOR--(02)-KORNEYCHUK, V.I., ROMANKEVICH, A.M.
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 2, PP 171-174
DATE PUBLISHED-----70
SUBJECT AREAS--MATHEMATICAL SCIENCES, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--AUTOMATIC CONTROL, MATHEMATIC CONTROL THEORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1965
STEP NO--UR/0103/70/000/002/0171/0174
CIRC ACCESSION NO--AP0054763
UNCLASSIFIED

2/2 013
CIRC ACCESSION NO--AP0054763
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF THE SYNTHESIS IN THE K
CIPHERED STRUCTURAL ALPHABET OF THE SCHEMES REALIZING THE OPERATIONS OF
SUMMATION AND MULTIPLICATION BY THE K MODULUS IS SUGGESTED.

PROCESSING DATE--23 OCT 70

UNCLASSIFIED

UNCLASSIFIED

UDC: 621.385.6

USSR

KORNEYCHUK, V. P. **K**

"Transverse Electron Kinetic Energy in a Beam Formed by a Magnetron Injection Gun"

Kiev, Izvestiya Vuzov SSSR-Radioelektronika, Vol 13, No 3, 1970, pp 317-326

Abstract: This article discusses electron spiral beams with relatively high oscillatory energy. Such beams are required in cyclotron resonance masers. The author mentions a previous paper published in the journal named above (1969, 12, No. 9, p. 1048) in which he presented preliminary calculations and the results of experiments indicating that non-adiabatic magnetron guns forming intense spiral electron beams satisfy the requirements of definite amounts of oscillatory energy and the requirements for a spectrum of transverse velocities at the beam output for a given remagnetization of the electron beam. The author uses the results of Kino and Kirstein for the description of the passage of laminar electron

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USSR

KORNEYCHUK, V. P., Izvestiya Vuzov SSSR-Radioelektronika, Vol 13,
No 3, 1970, pp 317-326

beams by the method of separation of variables as applied to magnetron injection guns in the spherical coordinate system (see Kirstein, P. T. and Kino, G. S., "Solution to the Equations of Space-Charge Flow by the Method of Separation of Variables," Journal of Applied Physics, 1958, 29, No. 12, p. 1758). With the aid of this method, the author analyzes the basic equations and obtains the initial conditions at the cathode. He concludes that a magnetron gun in the field he describes forms a beam with a higher oscillatory energy than the uniform field, and that the degree of pulsation at the electron beam boundary is determined by the initial velocity.

2/2

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USSR

UDC: 621.791.753.5.037-52:62-413:669.715

KORNEYEV, A. D., Candidate of Technical Sciences, ZUSIN, V. YA., Engineer,
FILIPPOV, V. K., Engineer, BAGRYANSKAYA, S. K., Engineer, and KOLCHANOV, A. F.,
Engineer, Zhdanov Metallurgical Institute

"Automatic Hidden Arc Welding of Thick-Walled Aluminum"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 48-49

Abstract: Aluminum 40mm thick was welded with a hidden arc (under ceramic flux) using the VDM-1601 rectifier as the power source. Two parallel connected VRSM-1000 rectifiers were used for metal thicker than 40mm. The butt joint welding of plates made from A5 aluminum was conducted with two electrode wires, perpendicular to the weld seam axis. A plate made from low-carbon steel with a milled groove was used in forming the reverse side of the seam. Specimens 40, 50, and 62mm thick, consisting of two plates, were welded in testing the one side, single pass method. Analyses of the macro- and microstructure of the seam metal show high density and the absence of pores and slag inclusions both in seam cross section and in places where the plates join the seam. The results show that single pass, one sided welding of sheets up to 70mm is possible without preheating and edge shaping.

1/1

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USSR

UDC: 621.319.4(088.8)

PSHENICHNYY, I. S., BUDKIN, I. A., ALEKSEYEV, V. L., STASHKOV, V. N.,
KORSEYEV, A. D., USPENSKIY, D. N.

"A Device for Testing Capacitors With Respect to Electric Parameters"

USSR Author's Certificate No 283416, filed 17 Apr 69, published 10 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V384 P)

Translation: This Author's Certificate introduces a device for testing capacitors with respect to electric parameters. The device consists of a vibration hopper with power supply, a transport mechanism, contact groups, and memory and sorting elements. As a distinguishing feature of the patent, automatic operation of the device is provided by making the memory element in the form of a light display panel with signal lamps in a number corresponding to the number of capacitors to be tested, and the analyzing element is a pointer with a photocell located above the lamps and kinematically coupled to the transport disc and providing electrical control of the sorting unit.

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USSR

UDC 621.791.753.045.053.01:669.71

BAGRYANSKIY, K. V., Doctor of Technical Sciences, KORNIYEV, A. D., Candidate of Technical Sciences, and ZUSIN, V. YA., Engineer, Zhdanov Metallurgical Institute

"Seam Metal Refining During Welding Aluminum with a Closed Arc"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 74, pp 32-33

Abstract: The effect of the welding method on seam metal refining was studied in the welding of aluminum with a closed arc using different fluxes with flux Zha-64A providing deep refining of the seam metal due to its high activity and good weld-bath insulation from the surrounding medium. Duration of preservation of the flux and electrode wire does not render a substantial effect, when welding with a closed arc, on the Al_2O_3 content in the seam, which remains

lower than in the metal being welded. The presence of up to 3% sand in the composition of flux Zha-64 does not cause any significant lowering of the refining capacity of the fluxes. The high metallurgical activity of ceramic flux Zha-64 for closed-arc welding of aluminum insures a high cryolite content in the flux composition. Two figures, six bibliographic references.

1/1

UDC: 621.319.4(088.9)

USSR

BUDKIN, I. A., ALEKSEYEV, V. L., STAZHKOV, V. N., KORNETEV, A. D.,
USPENSKIY, D. N., KOSHURO, V. A., BUDIN, V. I.

"A Case for Flat Capacitors"

USSR Author's Certificate No 283414, filed 12 May 69, published 10 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V367 P)

Translation: This Author's Certificate introduces a casing for flat capacitors of fixed value. The cartridge is made in the form of a ruler with reinforcing ribs fitted with locators for the capacitor leads. As a distinguishing feature of the patent, in order to improve the reliability of locating the leads, the casing is equipped with H-shaped transverse guide bridges and longitudinally oriented lobes.

1/1

- 69 -

USSR

R 030 021.791:609.7.10013.40

OLEYNIKOV, K. A., Engineer, KOSHEV, A. D., Engineer, MOSIN, V. M., Engineer,
(Zhdanov Institute of Metallurgy), and KALIKOV, N. P., Engineer (Zhdanov Heavy
Machinery Plant)

"Ozone Concentration in the Working Area During Aluminum Welding"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

Abstract: A study was made of ozone contamination of the working area during automatic welding of aluminum. The study was made under laboratory and plant conditions. The procedure for determining the ozone concentration is based on the ozone-potassium iodide interaction ($2KI + H_2O + O_3 = I_2 + 2KOH + O_2$). The ozone concentration under plant conditions was determined in welding 25-mm-thick panels of railroad containers made of A5 aluminum, and also in welding annular joints inside containers. Experimental procedures are briefly described, and averaged results of 10 experiments are presented in a table. With the relative instability of ozone taken into account, measurements were taken in order to determine its concentration at various distances from the arc, in the vertical and horizontal directions. A schematic experimental setup and the dependence of concentration on distance in both directions are presented. Ozone concentration at

1/2

USSR

OLEYNICHENKO, K. A., et al, Svarochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

the welder's respiratory level was found to be 0.44 mg/m³ (under the shield) and 0.52 mg/m³ (in front of the shield) in panel welding, and 2.26 mg/m³ and 4.19 mg/m³ in welding inside the container. These figures are substantially higher than the admissible level (0.1 mg/m³). Local exhaust ventilation is recommended for the reduction of contamination. 1 figure, 1 table, 4 references.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ENERGY SPECTRUM OF ELECTRONS IN BISMUTH FILMS STUDIED BY THE TUNNEL
EFFECT -U-
AUTHOR--(03)--KORNEYEV, D.N., LUTSKIY, V.N., YELINSON, M.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1333-5
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS, MATERIALS
TOPIC TAGS--TUNNEL EFFECT, BISMUTH COMPOUND, ELECTRON ENERGY LEVEL,
ELECTRON SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0971 STEP NO--UR/0131/70/012/005/1333/1335
CIRC ACCESSION NO--AP0133057
UNCLASSIFIED

2/2 017
CIRC ACCESSION NO--AP0133057

UNCLASSIFIED

PROCESSING DATE--0408070

ABSTRACT/EXTRACT---(U) GP-0- ABSTRACT. THE DIFFERENTIAL CHARACTERISTICS OF TUNNEL SYSTEMS CONTG. FILMS OF BI WERE MEASURED. THE ABOVE CHARACTERISTICS HAVE AN OSCILLATORY CHARACTER, DETD. BY DIMENSIONAL QUANTIZATION OF THE ELECTRONIC SPECTRUM IN THE THIN FILMS. A PICTURE WAS OBTAINED OF THE DISTRIBUTION OF QUASIDISCRETE LEVELS IN A FILM OF FIXED THICKNESS. FACILITY: INST. RADIOOTEKH, ELEKTRON., MOSCOW, USSR.

UNCLASSIFIED

Epidemiology

USSR

UDC 59:616.981.455(574.52)

AYKIMBAYEV, M. A., KORNEYEV, G. A., KUNITSA, G. M., TLEUGABYLOV, M. K., TRYKIN, V. S., SKVORTSKOVA, S. S., KUZIN, I. P., and SURMIN, V. M., Central-Asian Scientific Research Antiplague Institute, Alma-Ata

"A Tugai Focus of Tularemia in Dzhambulskaya Oblast in the Lower Chu Flow"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 10, 1971, pp 1595-1598

Abstract: *Rhipicephalus pumilio*, the tick which carries and transmits tularemia bacteria, can circulate the bacteria over a long time-span due to its ability to parasitize hares and other rodents at all stages of its development. The flooded fields in this region, on which cattle graze, create ideal conditions for the spread of the ixodid tick. *Dermacentor daghestanicus* is the dominant species because of its high percentage of infection by tularemia bacteria and because it preserves the bacteria in its body for a long period. Bacteriological studies were made of 117 mammals and 19,000 ticks of various species. In infected hares pathological-anatomic changes were manifested by enlargement of the spleen, in some cases by a change in the color and texture of the liver, and by the characteristic mound arrangement of cocci-bacteria in the spleen, liver, lungs, lymph nodes, and blood. 30 strains of *Pasteurella tularensis* were found in ixodid ticks and 7 strains, in the hare (*Lepus tolai*). These strains decompose glycerine and circulate in the tugai focus.

1/1

UDC 629.254

USSR

KORNEYEV, I.A., TYUN'KIN, YU.N., CHERNYSHONOV, E.A.

"Device For Ion Deposition Of A Film"

USSR Author's Certificate No 297709, filed 24 Sept 69, published 16 May 71
(from RZh:Elektronika i yeye primeneniya, No 2, Feb 72, Abstract No 22446F)

Translation: A device is proposed for ion deposition of a film on a substrate. The anode, which simultaneously also serves as a screen, is made in the form of a hollow body of revolution with a curvilinear generatrix, with which, in the direction of the end with the smaller diameter, a cathode is located, partially entering into this hollow body, and in the direction of the end with the larger diameter a substrate holder is located.

1/1

USSR

K UDC: 621.396.622

NIKIFOROV, V. V., KORNEYEV, L. A.

"A Transistorized Parametric Frequency Multiplier"

Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970 g. Sekts. radiotekhnicheskaya. Podsekt. Obshch. Radio-tekhniki (Reports of the Scientific and Technical Conference on the Results of Scientific Research Work for 1968-1969. Moscow Power Engineering Institute, 1970. Radio Engineering Section. Subsection on General Radio Engineering), Moscow, 1970, pp 58-66 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6D237)

Translation: The authors consider a frequency doubler and a frequency tripler based on semiconductor devices. It is assumed that there is a sharp collector-base junction and that the device operates without any transition into the saturation region. The analysis is based on the theory of varactor multipliers for the case of a closed PN junction. Basic energy relationships are established which can be used for complete calculation of these multipliers. A. K.

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1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ABSORPTION AND DISTRIBUTION OF CESIUM 137 IN CALVES OF DIFFERENT
AGES -U-
AUTHOR--(03)-SIROTKIN, A.N., SHILOV, V.P., KORNEYEV, M.A.
COUNTRY OF INFO--USSR
SOURCE--RADIOBIOLOGIYA 1970, 10(2), 309
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CESIUM ISOTOPE, DAIRY CATTLE, RADIOACTIVE CONTAMINATION,
MUSCLE TISSUE, BONE, SKIN, LIVER, KIDNEY, LUNG, HEART, BLOOD PLASMA,
SPLEEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605004/B11 STEP NO--UR/0205/70/010/002/0309/0307
CIRC ACCESSION NO--AP0139606

2/2 031

UNCLASSIFIED

PROCESSING DATE--DIRECTO

CIRC ACCESSION NO--AP0139606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISTRIBUTION OF PRIME137 CS AND ITS RESORPTION FROM THE GASTROINTESTINAL TRACT HAS BEEN STUDIED IN 12 CALVES OF DIFFERENT AGES FOLLOWING SINGLE PERORAL OR I.V. ADMINISTRATION. RESORPTION DEPENDS ON CALF AGE AND IN 3, 9, 14, AND 26 MONTHS OLD CALVES IT WAS 81-93, 57, 58, AND 53-99 PERCENT OF THE DOSE APPLIED, RESP. OUT OF THE RESORBED AMT. OF PRIME137 CS, 7.27-13.0 WAS FOUND IN MUSCLES, 0.77-3.7 IN THE SKELETON, 0.74-2.66 IN THE LIVER, 1.14-2.72 IN THE SKIN, 0.18-1.73 IN THE KIDNEYS, 0.42-1.38 IN THE LUNGS, 0.24-1.66 IN THE HEART, 0.70-1.56 IN THE BLOOD, 0.22-0.69 IN THE PLASMA, AND 0.09-0.28 PERCENT IN THE SPLEEN. MAX. CONC. OF PRIME137 CS, ADMINISTERED PERORALLY, IN VARIOUS PARTS OF THE SKELETON OF CALVES 3, 9, 14, AND 26 MONTHS OLD DIFFERED FROM THE MIN. CONC. BY A FACTOR OF 8.7, 7.0, 4.3, AND 4.5, RESP., AND AFTER I.V. ADMINISTRATION, BY A FACTOR OF 7.0, 4.0, 3.3, AND 2.5, RESP.

UNCLASSIFIED

1/2 021 UNCLASSIFIED
TITLE--PRODUCTION OF SEMI KILLED STEEL -U-

PROCESSING DATE--02OCT70

AUTHOR-(03)-PONER, D.H., BEREZINETS, V.YA., KORNEYEV, N.D.

COUNTRY OF INFO--USSR

SOURCE--METALLURG. JAN. 1970, (1), 19-20

DATE PUBLISHED----JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--KILLED STEEL, STEEL PRODUCTION, STEEL DEOXIDATION,
FERROSILICON, ALUMINUM, STEEL SHEET, IMPACT STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1989/1943

STEP NO--UR/0130/70/000/001/0019/0070

CIRC ACCESSION NO--AP0108272

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0108272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVEMENTS TO THE PRODUCTION OF SEMI KILLED STEEL ARE DESCRIBED. STEEL FOR USE AS THICK SHEET IS DEOXIDIZED WITH AL POWDER; OTHER TYPES ARE TREATED WITH FERRO-SI IN THE LADLE. THE MECHANICAL PROPERTIES OF THIS MATERIAL SATISFY STATE STANDARDS EXCEPT FOR CASES INVOLVING A VERY HIGH IMPACT STRENGTH AT LOW TEMP. AFTER MECHANICAL AGEING. THE USE OF SEMI KILLED INSTEAD OF KILLED STEEL IMPROVES THE PRODUCTIVITY OF THICK SHEET.

UNCLASSIFIED

USSR

UDC 669.018.298-426

LESHCHINER, A. M., ZHUCHIN, V. N., DZUGUTOV, M. YA., KORDENYEV, N. I., and
OVSEPYAN, V. G., Elektrostal' Plant and the All-Union Scientific Research
Institute of Aviation Materials

"Crack Removal in the Production of Wire Made From Precipitation Hardened Alloys"

Moscow, Stal', No 7, Jul 73, pp 652-654

Abstract: The processes of formation and nature of cracks were studied in a nickel-base alloy EP578 with the following chemical composition (in %): 18-20 Cr, 9-10.5 W, 2.75-3.25 Ti, 1.3-1.8 Al, 5.5-6.5 Co and 0.05 C (max). Deep longitudinal cracks (up to 2 mm in 5-mm diameter wire) along the entire wire length are sometimes formed. Investigation showed that this was linked with the occurrence of structural transformations during heating and, in particular, with precipitation of the gamma-prime type strengthening phase $\text{Ni}_3(\text{Ti}, \text{Al})$. Crack formation was also possible in the presence of surface defects and high residual tensile stresses. The first factor can be eliminated by rapid heating (at a rate not less than 250-300 deg/sec for suppression of aging), and the second factor -- by means of burnishing cold-drawn wire prior to its recrystallization, owing to which residual surface stresses become compressive stresses. Experiments also showed that cracks are formed in less-
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USSR

LESHCHINER, A. M., et al., Stal', No 7, Jul 73, pp 652-654

alloyed materials such as nickel-base alloys EP567 and NIMO-25 (66-69% Ni) with the following chemical composition:

| | Cr | W | Mo | C | Si | Mn | Fe |
|---------|-----------|---------|-----------|--------|-------|------|---------|
| EP567 | 14.5-16.5 | 3.0-4.5 | 15.0-17.0 | 0.03* | 0.15* | 1.0* | 1.5* |
| NIMO-25 | --- | --- | 25.0-28.0 | 0.035* | 0.25* | 0.5* | balance |

*-maximum

Precipitation of dispersed phases does not occur during heating of these alloys but proceeds by an ordering process. Thus, one of the necessary conditions of crack formation is the presence of structural transformations during heating. Four figures, four bibliographic references.

UDC 669.018.441.539.214

USSR

TROFIMENKO, V. N., and KORNEYEV, N. I.

"Nature of the Ductility of Various Smelts of ZhS6KP and EP109 Heat-Resisting Alloys"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute of Light Alloys), 1970, No 5, pp 105-108 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31750 by E. Volin)

Translation: Ductility diagrams are constructed for low-ductile smelts at 950-1200°. Brittle fracture under hot deformation occurs in metal with lowered technological ductility characteristics ($\sigma_{\text{H}}, \sigma_{\text{L}}, \sigma_{\text{B}}, \sigma_{\text{D}}$). The drop in the ductility of individual smelts of EP109 alloy results from their higher Si oxide content (up to 0.0018-0.0025%) and Mg content (up to 0.011%). The ductility drop in ZhS6KP alloy is due to the presence in the structure of large aggregations of Ti carbides and carbonitrides, which are sources of crack initiation. The content of low-melting impurities (Pb, Sn, Bi) in the alloys is insignificant; their concentration in ductile and brittle smelts is the same. Five illustrations. Four tables. Bibliography with seven titles.

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USSR

UDC 535.2

KORNEYEV, N. YE., and PAVLOV, YU. I., Institute of High Temperatures, Academy of Sciences USSR, Moscow

"Generation of Powerful, Short, Highly-Coherent Optical Pulses with a Diffraction-Limited Divergence"

Moscow, Doklady Akademii Nauk SSR, Tekhnicheskaya Fizika, Vol. 190, No 3, 70, pp 572-573

Abstract: This is a continuation of an earlier article by the authors in an effort to obtain a highly-coherent ruby-laser emission on the order of several hundred megawatt. The proposed system consists of four ruby lasers, each with a 50-cm long resonator, all coupled in series for an overall resonator length of 2 m. The optical decoupling was accomplished by saturable absorbers. The following rod series were used: first rod 7x100 mm, second 8x100 mm, third and fourth 10x100 mm each. Each rod was pumped by two LFP-2000 flash lamps in a 2-ellipse reflector filled with a liquid. The entire system was aligned by means of an OKG-13 gas laser with an element accuracy not less than 10 arc sec. The total generation threshold of all four rods was 2.4-3.5kj. A single

USSR

KORNEYEV, N. YE., PAVLOV, YU. I., Doklady Akademii Nauk SSR, Tekhnicheskaya Fizika, Vol 190, No 3, 70, pp 572-573

(axial) mode only was generated when the pumping was 1.6 times above the threshold, other equidistant modes occurring at higher pump energies with a $\Delta\nu = 0.01 \text{ cm}^{-1}$ separation. When one longitudinal or one transverse mode was generated, a smooth 2 monosec single pulse was produced. The energy was measured calorimetrically, the maximum being 1J which corresponds to a power of 500 Mw. Subsequent attempts to increase the power were unsuccessful due to rod failure.

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USSR

UDC 669.26.048

YEVSTYUKHIN, A. I., ABANIN, D. D., KORNYEV, V. A., MASLOV, V. P.

"Obtaining Alloys Based on Chromium by the Iodide Method"

V sb. Metallurgiya i metalloved. chist. met. (Metallurgy and Physical Metallurgy of Pure Metals -- collection of works), vyp. 9, Moscow, Atomizdat Press, 1971, pp 12-19 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G338)

Translation: In order to obtain iodide alloys of Cr with Y, V, and Ti, the charge was pressed and melted in an argon atmosphere in an arc furnace. Shavings which entered into the iodide process were prepared from the ingot obtained. Calculations were performed determining the possibility of deposition of Cr alloys with V, Ti, and Y. Thermal dissociation was carried out by the Van Arkel scheme. In all the experiments the filament temperature was 1,000-1,100°, and the flask temperature was 750-800°. The precipitates obtained in the iodide process were remelted in an arc furnace and investigated. The Cr-V and Cr-Ti alloys in the analyzed concentration range are single-phase, but separations of a second phase are obvious in the microstructure of the Cr-Y alloy. On introduction of Y into the raw material, the effect of additional purification of the Cr is observed in the process of iodide refining. The iodide alloys of Cr with V and Ti were obtained, and the transfer coefficient was found as a function of the raw material composition.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SPECTROGRAPHIC ANALYSIS OF BINARY ALLOYS. I. ANALYSIS OF ZIRCONIUM
AND HAFNIUM ALLOYS -U-
AUTHOR--(03)-KORNEYEV, V.A., BARINOV, I.P., ISAYEVA, O.G.
COUNTRY OF INFO--USSR
SOURCE--Zh. ANAL. Khim.: 25: 732-6 (APR 1970)
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--SPECTROGRAPHIC ANALYSIS, BINARY ALLOY, ZIRCONIUM COMPOUND,
HAFNIUM COMPOUND, SPECTROGRAPH, QUANTITATIVE ANALYSIS/(U)DFS8
SPECTROGRAPH

CENTREL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3C01/0457

STEP NO--UR/0075/70/025/000/0732/0756

CIRC ACCESSION NO--AP0126209

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UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AP0126209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS ARE SUGGESTED FOR THE DIRECT QUANTITATIVE SPECTROGRAPHIC ANALYSIS OF ZIRCONIUM HAFNIUM ALLOYS. SPECTRA WERE EXCITED IN A HIGH FREQUENCY SPARK (A COPPER ELECTRODE) AND PHOTOGRAPHED ON A DFS-1 SPECTROGRAPH (DISPERSION 3 A-MM) WITH A THREE LENS SYSTEM OF SLIT ILLUMINATION. THE ANALYSIS OF ONE SAMPLE BY TWO SPECTRA TAKES ABOUT 30 MIN, THE ANALYSIS OF 20 SAMPLES TAKES ABOUT 3 HOURS.

UNCLASSIFIED

USSR

UDC 543.42

K
KORNEYEV, V. A., BARINOV, I. P., and ISAYEVA, O. I.

"Spectral Analysis of Binary Alloys in a Wide Range of Components.
Communication 1. Analytical Methods for Zirconium and Hafnium Alloys"

Moscow, Zhurnal Analiticheskoy Khimii, Vol. 25, No. 4, Apr 70,
pp 732-736

Abstract: Three methods for direct quantitative spectral analysis of Hf-Zr alloys in the concentration range 0.5-99.5% have been proposed: the method of three standards, and rapid methods of three lines and three-staged relaxator with mean square error of 5-7, 6-8, and 7-10% respectively. Spectra were excited in a high frequency spark (with a copper electrode) and polarographed on a DFS-8 spectrograph (with a dispersion of 3A/mm), using a three lens system of the slit illumination. The rapid methods permit the analysis to be carried out without using standards. The analysis of one sample by two spectra requires about 30 min, while analysis of 20 samples -- only 5 hrs.

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USSR

UDC 621.385.623.4

PANOV, P.V., KORNEYEV, V.N.

"Investigation Of Self-Contained Focusing Lens For Klystrons With A Ribbon Electron Stream"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 60-67 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 1CA148)

Translation: The results are presented of an investigation of a self-contained focusing lens for klystrons with a ribbon electron stream. The investigation was conducted by the method of modeling in an electrolytic bath. With the help of the aberration parameter which is introduced, the optimum form and dimensions of the electrodes of the lens are evaluated. The results of the experimental investigation are presented. Summary.

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USSR

RYZHKOV, V.A., BRATOV, A.M., KOLESNIKOVA, I.A., KORNEYEV, V.N.

UDC 621.59:539.59.530.93

"Study Of The Composition Of Residual Gases In Deposition Units Under Industrial Conditions"

Sb. nauch.tr. po probl. mikroelektron. Mosk. in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1971, Issue 7, pp 13-18 (from RZh:Elektronika i yeye primeneniye, No 6, June 1972, Abstract No 6A57)

Translation: The results are presented of an analysis with the aid of a KM-1 quadrupole mass spectrometer of the composition of residual gases in the vacuum chambers of various types of deposition units. Under industrial conditions, and in the types of deposition units considered, the composition of residual gases differs but little and is determined by the technological process in progress and the individual condition of the unit. Vapors of water, nitrogen and oxygen and various hydrocarbons are the principal components of residual gases in deposition units. Substantial changes of the composition of the residual gases occur during heating of the substrates and deposition. The composition of the residual gases during deposition of thin films depends on the form of the material which is vaporized. The KM-1 mass spectrometer showed its usefulness for conducting qualitative analyses of residual gases under industrial conditions. A.F.

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Acc. Nr:

AP0038034

K

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 115-123

AN INVESTIGATION OF SUPERMAGNETISM OF FERROMAGNETIC PARTICLES BY MOSSBAUER SPECTROSCOPY

Afanas'ev, A. M.; Suzdalev, I. P.; Gen, M. Ya.;
Gol'danskiy, V. I.; Korneyev, V. P.

A theoretical and experimental investigation of supermagnetism of ferromagnetic spherical particles is carried out. It is found that the anisotropy energy (relaxation time) drops to zero for crystals with cubic symmetry at particle dimensions of the order of a certain d_c , and then begins to increase with increase of particle size due to turning of the magnetic moments of separate atoms with respect to each other. It is also shown that this phenomenon is not observed in uniaxial crystals. An investigation by Mossbauer spectroscopy of particles of the ferromagnetic alloy FeNi (37% Ni) with a face centered cubic lattice (the particle size varied between 800 and 120 Å) revealed a pronounced anomaly in the hyperfine structure of 190 and 120 Å particle spectra; this confirms the theoretical dependence of anisotropy energy on the particle size.

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REEL/FRAME
19731076

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USSR

UDC 661.872.2+847+856:669.092.5.539.27

KORNEYEVA, A. N., LYSENKO, V. P., IYELVLEV, V. M., and VORONTSOV, YE. S.,
Voronezh Polytechnic Institute

"Structural Changes of Colored Oxide Films on Iron, Nickel, and Copper
During Their Reduction by Hydrogen and Carbon Monoxide"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya,
No 8, Aug 73, pp 21-26

Abstract: An attempt was undertaken to carefully study the structural changes occurring in colored films on Fe, Ni, and Cu during their reduction by hydrogen and carbon monoxide. Samples of armco iron and electrolytic nickel and copper were oxidized at certain temperatures and the color changes noted; for iron the color of the oxide film changed from blue to violet to yellow when reduced at 400°C with hydrogen and 450°C with Cu; color changes for the oxide film on nickel changed from blue to violet to yellow when reduced at 300°C in hydrogen and 350° -- in carbon monoxide; and for copper -- blue to red to orange when reduced in hydrogen at 300°C and in Cu at 350°C. Analysis of the results showed that the growth of film thickness is accompanied by an increase in crystal size and their perfection.

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USSR

KORNEYEVA, A. N., et al., *Izvestiya Vysshikh Uchebnykh Zavedaniy -- Chernaya Metallurgiya*, No 8, Aug 73, pp 21-26

The oxide film on Fe is independent of its thickness and consists primarily of alpha- Fe_2O_3 and a small amount of Fe_3O_4 ; the oxide film on nickel is NiO; and on copper, according to the degree of film thickening, the content of tenorite CuO is increased and the amount of cuprite Cu_2O is diminished.

The nickel oxide film is not altered by the reduction process. It was shown from electronographic analysis that the structural changes of a film during its reduction and ion migration can cause some rearrangement of the crystal lattice from the higher oxide to the lower. From a thermodynamic viewpoint, the extraction of oxygen from the oxide film leads to the formation of a supersaturated solid solution of the metal in the oxide. From the molecular viewpoint, the mechanism of reduction takes into account the action of the electrical field within the film and the reduction mechanism is just the opposite of the oxidation process. Two figures, nine bibliographic references.

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USSR

UDC 576.8.093.2

TSYBUL'SKAYA, N. V., SHVARTSMAN, Ya. S., KORNEYEVA, E. P., and SMORODINTSEY, A. A., Academician, Academy of Medical Sciences, USSR, All Union Scientific Research Institute of Influenza, Leningrad

"Antibody Synthesis by Lymphoid Cells After Immunization With Two Viral Antigens"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 3, 1970, pp 719-721

Abstract: The adsorption method was used to study antibody formation by spleen cells in mice immunized with influenza A2 and B viruses. The number of cells active in antibody formation did not increase until 48 hours after immunization, reaching a peak on the 5th day and quickly decreasing thereafter. Even at the height of the response, no more than 0.76% of the investigated cell population participated. Of the 24,518 cells from 15 immunized animals, only 293 cells produced antibodies, 140 to the A2 virus and 133 to the B virus. No cell elaborated the two types of antibodies at the same time. The number of cells that produced antibodies to each of the viruses was unrelated to whether the animals were immunized with monovalent or bivalent vaccine. It is thus evident that lymphoid cells are

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USSR

TSYBUL'SKAYA, N. V., et al, Doklady Akademii Nauk SSSR, Vol 195, No 3, 1970,
pp 719-721

functionally differentiated with respect to their reactions with different
viral antigens.

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USSR

UDC: 669.15:621.785.79

BERNSHTEYN, M. L., ODESSKIY, P. D., KORNEYEVA, G. B., Moscow Institute of Steel and Alloys

"Thermomechanical Treatment of Low-Alloy Steels Under Deformation in the Intercritical Temperature Range"

Moscow, Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 145-149

Abstract: The authors examine the prospects of using quenching from the intercritical temperature range both after deformation and without deformation to harden low-carbon low-alloy structural steel. The study specimens are 30 mm sheets of rolled martensite steels grade St. 3sp, 15G2Fsp and 15G2Fps. Eight heat-treat cycles were studied. It is found that quenching from a point 50°C below the A_{c3} temperature followed by annealing at 650°C gives class S40 properties in rolled 15G2F steel (yield stress above 40 kg/mm², ultimate strength above 56 kg/mm²) combined with high ductility (relative lateral contraction after fracture greater than 80%). Quenching preaustenized steels of this grade after deformation in the intercritical temperature range with subsequent annealing at 650°C gives class S50 strength properties in the rolled stock (yield stress above 50 kg/mm², ultimate strength above 60 kg/mm²) com-

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USSR

BERNSHTEYN, M. L. et al., Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 145-149

bined with high ductility (relative lateral contraction after fracture more than 75%) and impact strength at subzero temperatures. Such treatment also considerably increases the cold-shortness of such steels.

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USSR

UDC 51

ZHUK, K. D., KORNEYEVA, G. P., TIMCHENKO, A. A.

"Construction of Mathematical Models of Multiconnected Logical-Dynamic Control Systems"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971, pp 188-207 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V382)

No abstract

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USSR

UDC 669.245'26'295'71:620.186:669.018.2:621.785.78

PAISOV, A. I., DMITRIYEV, L. I., ANISIMOVA, G. V., and KORBYEVA, N. N.

"Study of the Effect of Aging Temperature on the Structure and Properties of KhN77TYuR Alloy"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSA (Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute of Light Alloys), 1970, No 5, pp 97-102 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I751 by E. Volin)

Translation: The interrelationship is found between σ_{100} and $\sigma_{0.2}$ at 700 and 800° (from reference data), characterized by the correlation factor 0.9 and 0.86 respectively, as well as between σ_{1000} , $\sigma_{0.2}$ and testing temperature, correlation factor 0.71. KhN77TYuR alloy was tested after heating to 1080°, 8 hr, with subsequent aging at 700-850°, 16 hr. An aging temperature increase in the 700-800° range increases heat resistance and stability of structure. Aging at 850° sharply reduces rupture strength as a result of a decrease in the quantity of the strengthening phase. Air cooling from 1080° assures a higher rupture strength as a result of further aging in tests than with subsequent

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USSR

PAISOV, A. I., et al., Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa, 1970, No 5, pp 97-102

aging at 700 and 800° ($_{35}^{750}$ 150 hr as against 95 and 120 hr respectively).

0.2 changes analogously. Four illustrations. Bibliography with seven titles.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--QUALITY AND EFFECTIVENESS OF CONTROLLING THE TEMPERATURE OF THE
FLUIDIZED BED ROASTING OF MOLYBDENITE CONCENTRATES -U-
AUTHOR--(03)-GOLANT, A.I., KORNEYEVA, S.G., STEPANOV, A.V.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(3), 45-7
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
OCEANOGRAPHY, MATERIALS
TOPIC TAGS--THERMAL EFFECT, ROASTING FURNACE, FLUIDIZED BED, AUTOMATIC
CONTROL SYSTEM, MOLYBDENUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1903 STEP NO--UR/0136/70/0437003/0045/0047
CIRC ACCESSION NO--AP0132165
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132165

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. A STUDY WAS MADE TO DET. THE DECREASE IN LOSS DUE TO INCREASE IN TEMP. BY MEANS OF CHANGING CONTROL, ESTG. THE QUALITY OF AN AUTOMATED SYSTEM OF CONTROL AND ESTG. THE QUALITY OF AN AUTOMATED SYSTEM UNDER NEW CONDITIONS. FOR DET. THE POSSIBILITY OF DEVELOPING A TEMP. CONTROL SYSTEM AND CHANGING THE QUALITY OF TECHNOL. PROCESSES, THE ROASTING TEMP. WAS VARIED IN 20DEGREES INTERVALS FROM 555 TO 575DEGREES. THE STUDY WAS MADE AT VARIOUS TEMPS. DURING 8 HR. THE TEMP. AND AMT. OF THE CHARGE MATERIAL WAS RECORDED THROUGH EACH 5 MIN. A TEST OF THE ASH AND FLAME WAS TAKEN AT THE BEGINNING AND THE END OF EACH RECORDED TEMP. CHANGE. THE CONC. OF S IN THE DUST DECREASED BY 0.23PERCENT; I.E., THE TEMP. CHANGE AFFECTS THE QUALITY OF THE DUST COLLECTED DURING PURIFICATION OF THE EXITING GASES. DECREASING SULFIDES IN THE ASH BY 0.4PERCENT BY LEACHING WITH AMMONIA INCREASES THE RECOVERY OF MO IN THE SOLN. AND CORRESPONDINGLY LOWERS ITS LOSS. THIS LOSS IN DUST, GASES WAS 570 KG MO PER YEAR. DECREASING THE CONC. OF SULFIDES IN THE FLAME BY 2.9PERCENT LOWER THE LOSS OF MO BY 350 KG PER YEAR.

UNCLASSIFIED

USSR

ABAYEV, M. I., KORNEL'D, M. I., Institute of Semiconductors, Academy of Sciences
USSR, Leningrad

"Light Scattering in Plastically Deformed NaCl Crystals"

Leningrad, Fizika Tverdogo Tela, No 9, September 1970, pp 2760-2762

Abstract: The distribution of light in plastically deformed crystals of sodium chloride was investigated. The crystals were grown from the raw material "NaCl for acoustic monocrystals" by the Kiropoulos method and after growth were cooled, together with the furnace, for 15 hours. The sample had the shape of a cylinder 1.0 cm in diameter and 1.5 cm high, cut along the cubic axis of the crystal. Plastic deformation was effected by compression of the sample along the cylinder axis. Incident radiation with a wavelength of 540 nanometers, polarized in such a manner that the electrical vector is perpendicular to the plane of scattering, passes along the cylinder axis which coincides with the direction of [100]. Measurements are made of the intensity of light scattered at an angle of 90° by a central region of the sample with a volume of several cubic millimeters. The ratio of the intensity of the scattered light to the angle of turn can be found by turning the sample about its axis. The experimental results are presented in the article. 2 figures, 4 bibliographic entries.

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USSR

UDC 612.384.6.01

KOLYADA, Yu. Ye., KORNIKOV, Ye. A., PAYNBERG, Ya. B.

"Creation of a Dense Electron Cloud in the Magnetic Field of an Open Trap"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 10, Oct 73, pp 2170-2172

Abstract: An experimental study is made of the possibility of creating an extended high-density electron cloud in the rising magnetic field of an open magnetic trap. It is shown that by using the induction method of accelerating electrons in the magnetic field it is possible to create a long-lived electron cloud with a deep potential well. By the use of a beam with energy of up to 5 keV and current of 3 amp in a magnetic field which rises to 1600 gauss in $4 \cdot 10^{-4}$ sec an electron cloud was produced with a length of 50 cm, electron density in the axial region of $2 \cdot 10^{11} \text{ cm}^{-3}$, and a 200-kV potential well. The lifetime was 250 μs . The depth of the potential well is not the limiting value. It can be considerably increased by proper selection of gun design, anode voltage, and vacuum. The authors thank L. I. Bolotin for assistance in the work.

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UDC 621.371.332.3:621.391.883.6

KORNIL'YEV, E. A.

"Nonparametric Methods of Detecting Radar Signals Against a Background of Gaussian Noise with Unknown Dispersion"

Sb. nauch. tr. Kiev. in-t inzh. grachd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 28-30 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6G5)

Translation: A study is made of a method of executing the algorithm of symbolic nonparametric detection of radar signals as applied to the case of multiple detection of rapidly fluctuating periodic incoherent pulsed signals. Formulas are derived for the probability of correct detection and false alarm. A comparison is made with the Vilkokson detectors. The bibliography has 1 entry.

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USSR UDC 546.3-19'621'289'46'27'73'74'77'78'654'655'659'656'28+669'71'783'
721'781'25'24'28'27'854'855'859'856'782

KORNILOV, A. A., Candidate of Technical Sciences, Editor-in-Chief

Metallotermicheskiye Metody Polucheniya Soyedineniy i Splavov (Metallothermic Methods for Preparing Compounds and Alloys), Novosibirsk, "Nauka," 1972, 80 pp

Translation of Annotation: Metallothermic methods of preparing intermetallic compounds and alloys in many cases are technologically and economically more advantageous than the method of direct alloying of components. This volume presents results of studies on the metallothermic preparation of intermetallic compounds and alloys during the reduction of oxides, halides, and other substances. The optimal conditions for preparation and the physico-chemical characteristics of the compounds obtained were determined; in individual cases, attempts to elucidate the mechanism and kinetics of the reduction process are given.

This collection contains 13 articles covering the following topics: the aluminothermal preparation of AlB_{12} from various boron-containing minerals; compounds and alloys in the silicon-boron system, SiB_4 in particular; magnesio-thermal preparation and structure of cobalt-magnesium and nickel-magnesium alloys; germanio-thermal reduction of molybdenum anhydride in vacuum to obtain $MoGe_2$; the preparation of aluminides of rare earth metals having the composition

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KORNILOV, A. A., Metallotermicheskiye Metody Polucheniya Soyedineniy i Splavov, "Nauka," 1972, 80 pp

MeAl₄ by the aluminothermal reduction of oxides; the aluminothermal reduction of cobalt and nickel chlorides and the tensometric study in the cobalt chloride-nickel chloride and aluminum-aluminide systems; preparation of ternary alloys and aluminide from the molybdenum-nickel-aluminum system by the aluminothermal reduction of oxides. Studies of the physical properties are presented for the germanium compounds of some of the transition metals relative to the nature of the intermetallic compounds in the tungsten-germanium system.

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USSR

UDC 621.372.8.092.22

VOLKOV, Ye. G., LIFERENKO, V. D., KORNILOV, A. A.

"A Wide-Band Periodic Traveling-Wave Decelerating System"

Izv. Leningr. elektrotekh. in-ta (News of the Leningrad Electrical Engineering Institute), 1970, vyp. 96, pp 25-28 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B132)

Translation: The paper demonstrates the feasibility of making decelerating systems with low variance and a broad frequency band on the basis of a "chain" line with geometric phasing of the field; the inner conductor of the line is formed by a sequence of rectangular brackets fastened to conductive or dielectric supports. The system has two bands of transparency, the upper band having a negative fundamental harmonic, and the low-frequency band existing only in the case of conductive supports. The computational results are experimentally confirmed. One illustration, N. S.

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UDC 669.822.004.2

KORNILOV, A. N.

"Hygienic Aspects of Removal and Storage of Radioactive Waste from Enterprises Which Extract and Process Uranium Ore"

Vopr. gigiyeny truda na uranov. rudnikakh i obogatit. predpriyatiyakh -- V sb. (Problems of Hygiene of Labor in Uranium Mines and Beneficiation Enterprises -- collection of works), Moscow, Atomizdat Press, 1971, pp 71-85 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 46269)

Translation: It is mandatory that the exhausts of hydrometallurgical plants be purified. Liquid radioactive wastes must be subjected to purification to the limiting allowable concentrations, taking into account the content of all the basic elements of the uranium series in them. The storages for solid waste must be maintained, taking into account possible filtration of radioactive water into the underground aquifers. The water supply sources must be located ~ 1,000 meters from the limits of radioactive contamination of groundwater. There are 4 illustrations and 1 table.

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